# Statement of Basis

**Permit to Construct No. P-2017.0045**
**Project ID 61930**

**Trinity Trailer Mfg., Inc. - Federal Way**
**Boise, Idaho**

**Facility ID 001-00343**

**Final**

**November 15, 2017**
**Rakael Pope**
**Permit Writer**

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

## ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

| | |
|---|---|
| AAC | acceptable ambient concentrations |
| AACC | acceptable ambient concentrations for carcinogens |
| acfm | actual cubic feet per minute |
| Btu | British thermal units |
| CAA | Clean Air Act |
| CAS No. | Chemical Abstracts Service registry number |
| cfm | cubic feet per minute |
| CFR | Code of Federal Regulations |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| $CO_2e$ | $CO_2$ equivalent emissions |
| DEQ | Department of Environmental Quality |
| dscf | dry standard cubic feet |
| EI | Emission Inventory |
| EL | screening emission levels |
| EPA | U.S. Environmental Protection Agency |
| GHG | greenhouse gases |
| gph | gallons per hour |
| gpm | gallons per minute |
| HAP | hazardous air pollutants |
| hr/yr | hours per consecutive 12 calendar month period |
| IDAPA | a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act |
| lb/hr | pounds per hour |
| m | meters |
| MACT | Maximum Achievable Control Technology |
| MMBtu | million British thermal units |
| MMscf | million standard cubic feet |
| NAAQS | National Ambient Air Quality Standard |
| NESHAP | National Emission Standards for Hazardous Air Pollutants |
| $NO_2$ | nitrogen dioxide |
| $NO_X$ | nitrogen oxides |
| NSPS | New Source Performance Standards |
| O&M | operation and maintenance |
| $O_2$ | oxygen |
| oz/day | ounces/day |
| PAH | polyaromatic hydrocarbons |
| PC | permit condition |
| PM | particulate matter |
| $PM_{2.5}$ | particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers |
| $PM_{10}$ | particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers |
| POM | polycyclic organic matter |
| PSD | Prevention of Significant Deterioration |
| PTC | permit to construct |
| PTE | potential to emit |
| *Rules* | *Rules for the Control of Air Pollution in Idaho* |
| SCL | significant contribution limits |
| $SO_2$ | sulfur dioxide |
| $SO_x$ | sulfur oxides |
| T/day | tons per calendar day |
| T/hr | tons per hour |

| | |
|---|---|
| T/yr | tons per consecutive 12 calendar month period |
| TAP | toxic air pollutants |
| U.S.C. | United States Code |
| VOC | volatile organic compounds |

## FACILITY INFORMATION

### *Description*

Trinity Trailer MFG, Inc. (Trinity Trailer) is a truck trailer repair facility at 7533 S. Federal Way in Boise, Idaho. The facility is located southeast of the Boise airport, near the Gowen Road industrial park area and I-84. Operations at this facility are typically performed eight hours per day and five days per week. Emission sources at the facility include natural gas direct-fired unit heaters, natural gas indirect-fired unit heaters, spray painting area, welding, and plasma cutting.

The heaters include an ENG8-3202 Landa pressure wash water heater, five 0.325 MMBtu/hr plastic liner warming heaters, two 0.22 MMBtu/hr Payne office heaters, one 0.088 MMBtu/hr Bryant heater, three 0.45 MMBtu/hr short infrared shop heaters, three long 0.4605 MMBtu/hr infrared shop heaters, and a PON 0.03 MMBtu/hr compressor room heater. The welding operations include three Miller SMT350 and three Miller ALT304 units. Each is equipped with Kemper-type fume collection with filtration units. The four plasma cutters are Hypertherm Powermax 65 with HT220819 nozzles and are used for both stainless and carbon steel cutting. The plasma cutting operation emissions are controlled with a filtered fume extractor at each plasma cutter. Lastly, the painting operation is completed with HVLP spray guns inside the warehouse with no emission control.

### *Permitting History*

This is the initial PTC for an existing facility thus there is no permitting history.

### *Application Scope*

This permit is the initial PTC for this facility. The applicant has submitted a PTC application in accordance with the requirements of a Consent Order for an existing truck trailer repair facility.

### *Application Chronology*

| | |
|---|---|
| August 2, 2017 | DEQ received an application and an application fee. |
| August 14– August 29, 2017 | DEQ provided an opportunity to request a public comment period on the application and proposed permitting action. |
| August 31, 2017 | DEQ determined that the application was complete. |
| September 8, 2017 | DEQ made available the draft permit and statement of basis for peer and regional office review. |
| September 13, 2017 | DEQ made available the draft permit and statement of basis for applicant review. |
| October 13, 2017 | DEQ made available a second draft permit and statement of basis for applicant review. |
| October 24, 2017 | DEQ received the permit processing fee. |
| November 15, 2017 | DEQ issued the final permit and statement of basis. |

## TECHNICAL ANALYSIS

### *Emissions Units and Control Equipment*

**Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION**

| Equipment Group | Sources | Control Equipment | Emission Point |
|---|---|---|---|
| Heaters | Compressor Room Heater:<br>Manufacturer: PON<br>Model: Wall mounted<br>Manufacture Date: 2014<br>Heat input rating: 0.03 MMBtu/hr<br>Fuel: Natural Gas | None | Vented to Compressor Room |
| | Plastic Liner Warming Heater (5 heaters):<br>Manufacturer: Roberts Gordon<br>Model: CRV<br>Manufacture Date: 2014<br>Heat input rating: 0.325 MMBtu/hr<br>Fuel: Natural Gas | None | Vented to Main Shop |
| | Hot Water Heater Pressure Wash:<br>Manufacturer: Landa<br>Model: ENG8-3202<br>Manufacture Date: 2014<br>Heat input rating: 0.658 MMBtu/hr<br>Fuel: Natural Gas | None | Roof Vented |
| | Office Heaters (2 heaters):<br>Manufacturer: Payne<br>Manufacture Date: 2014<br>Heat input rating: 0.22 MMBtu/hr<br>Fuel: Natural Gas | | |
| | Office Heater:<br>Manufacturer: Bryant<br>Manufacture Date: 2014<br>Heat input rating: 0.088 MMBtu/hr<br>Fuel: Natural Gas | | |
| | IR-Short Shop Heaters (3 heaters total):<br>Manufacturer: SRP<br>Model: MNUA125<br>Manufacture Date: 2014<br>Heat input rating: 0.450 MMBtu/hr<br>Fuel: Natural Gas | | |
| | IR-Long Shop Heaters (3 heaters total):<br>Manufacturer: SRP<br>Model: MN-UA175<br>Manufacture Date: 2014<br>Heat input rating: 0.4605 MMBtu/hr<br>Fuel: Natural Gas | | |
| Plasma Cutters | Handheld Plasma Cutter (PC1, PC2, PC3, PC4):<br>Manufacturer: Hypertherm<br>Model: Powermax 65<br>Manufacture Date: 2013<br>Max Output: 65A<br>Nozzle: HT220819 | Fume Extractor (K1, K2, K3, K4):<br>Manufacturer: Kemper<br>Model: Filter Master XL<br>Type: Cartridge filter<br>$PM/PM_{10}/PM_{2.5}$ control efficiency: ≥99.98% | Vented to main shop |
| Welders | Welder (W1, W2, W3):<br>Manufacturer: Miller<br>Model: SMT350<br>Manufacture Date: 2013<br>Weld Type: GMAW (MIG), TIG<br>Wire 1: ER80S/D2<br>Wire 2: 308lsi | Fume Extractor (KW1, KW2, KW3):<br>Manufacturer: Kemper<br>Manufacture Date: 2014<br>Model: Filter Master XL<br>Type: Cartridge filter<br>$PM/PM_{10}/PM_{2.5}$ control efficiency: ≥99% | Vented to main shop |

| Equipment Group | Sources | Control Equipment | Emission Point |
|---|---|---|---|
| Welders, Continued | Welder (W4, W5, W6):<br>Manufacturer: Miller<br>Model: ALT304<br>Manufacture Date: 2013<br>Weld Type: GMAW (MIG), TIG<br>Wire 1: ER80S/D2<br>Wire 2: 308lsi | Fume Extractor (KW4, KW5, KW6):<br>Manufacturer: Kemper<br>Manufacture Date: 2017<br>Model: Filter Master XL<br>Type: Cartridge filter<br>$PM/PM_{10}/PM_{2.5}$ control efficiency: ≥99% | Vented to main shop |
| Coater | Spray Gun:<br>Manufacturer: 3M<br>Model: Accuspray 16570<br>Manufacture Date: 2013<br>Spray Gun Type: HVLP<br>Transfer Efficiency: ≥ 60% | None | Vented to main shop |

## *Emissions Inventories*

### Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory was developed for the sixteen heaters, two plasma cutters, six welders, and one spray coating gun operation at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant, GHG, and HAP were based on 8760 hr/yr (24 hr/day x 365 day/yr) running time for all heaters; 2,080 hr/yr (8 hr/day x 261 day/yr) multiplied by a 175% production factor for welding operations with fume extractors using 99% filter efficiency for $PM/PM_{10}/PM_{2.5}$; multiplied by a 145% production factor plasma cutting operations, with fume extractors using 99.98% filter efficiency for $PM/PM_{10}/PM_{2.5}$; and 2,080 hr/yr multiplied by 300% for coating operations.

### Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit (PTE) is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a "Synthetic Minor" source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled Potential to Emit for regulated air pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. Using this definition of Potential to Emit an emission inventory was developed for the sixteen heaters, four plasma cutters, six welders, and one spray painting operation at the facility (see Appendix A) associated with this proposed project.

**Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

| Source Group | $PM_{10}/PM_{2.5}$ | $SO_2$ | $NO_X$ | CO | VOC |
|---|---|---|---|---|---|
| | T/yr | T/yr | T/yr | T/yr | T/yr |
| **Point Sources** | | | | | |
| Heaters | 7.28E-02 | 5.75E-03 | 9.58E-01 | 8.05E-01 | 5.27E-02 |
| Welding | 1.09E-02 | 0.00 | 0.00 | 0.00 | 0.00 |
| Plasma Cutting | 4.20E+01 | 0.00 | 9.98E+00 | 0.00 | 0.00 |
| Coatings | 3.79E+00 | 0.00 | 0.00 | 0.00 | 1.02E+01 |
| **Total, Point Sources** | **45.87** | **0.01** | **10.94** | **0.81** | **10.25** |

The following table presents the uncontrolled Potential to Emit for HAP pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For this truck trailer repair operation uncontrolled, Potential to Emit calculations are based upon a worst-case for operation of the facility with the same criteria as was used to calculate uncontrolled PTE for regulated air pollutants. Then, the worst-case maximum HAP Potential to Emit was determined for this truck trailer repair operation.

**Table 3 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS**

| Hazardous Air Pollutants | PTE (T/yr) |
|---|---|
| Arsenic | 1.9E-06 |
| Benzene | 2.0E-05 |
| Beryllium | 1.1E-07 |
| Cadmium | 1.1E-05 |
| Chromium | 7.8E+00 |
| Cobalt | 8.0E-07 |
| Dichlorobenzene | 1.1E-05 |
| Formaldehyde | 7.2E-04 |
| Hexane | 1.7E-02 |
| HMDI | 1.8E-03 |
| Lead | 4.8E-06 |
| Manganese | 7.7E-01 |
| Mercury | 2.5E-06 |
| Naphthalene | 1.0E-01 |
| Nickel | 3.4E+00 |
| Polycyclic Organic Matter (PAH MAX) | 6.5E-06 |
| Selenium | 2.0E-05 |
| Xylene | 4.2E+00 |
| **Total** | **16.29** |

## Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project. This is an existing facility. However, since this is the first time the facility is receiving a permit, pre-project emissions are set to zero for all criteria pollutants.

## Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project. Emissions estimates of criteria pollutant, GHG, and HAP uncontrolled PTE were based on:

- Natural gas heating unit emission factors from AP-42 Section1.4 and operation of 8,760 hours per year;
- Welding emission factors from AP-42, operation of 1,920 hours per year, and process information specific to the facility for this proposed project;
- Plasma cutting operations of 2,262 hours per year of steel and stainless steel cutting; and
- Coating operation of 2,080 hours per year, 60% HVLP (high volume low pressure) spray gun transfer rate, and an 85% isocyanate reaction factor.

The following table presents the post project Potential to Emit for criteria and GHG pollutants from all emissions units at the facility as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

**Table 4 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

| Source | $PM_{10}/PM_{2.5}$ | | $SO_2$ | | $NO_X$ | | CO | | VOC | |
|---|---|---|---|---|---|---|---|---|---|---|
| | lb/hr[a] | T/yr[b] | lb/hr[a] | T/yr[b] | lb/hr[a] | T/yr[b] | lb/hr[a] | T/yr[b] | lb/hr[a] | T/yr[b] |
| Heaters | 1.66E-02 | 7.28E-02 | 1.31E-03 | 5.75E-03 | 2.19E-01 | 9.58E-01 | 1.84E-01 | 8.05E-01 | 1.20E-02 | 5.27E-02 |
| Welding | 9.01E-06 | 2.59E-05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Plasma Cutting | 6.4E-04 | 1.20E-03 | 0.00 | 0.00 | 1.26E+00 | 1.42E+00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coatings | 2.89E-01 | 9.03E-01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.80E-01 | 2.43E+00 |
| **Post Project Totals** | **0.31** | **0.98** | **0.00** | **0.01** | **1.48** | **2.38** | **0.18** | **0.81** | **0.79** | **2.49** |

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

## Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

**Table 5 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

| Source | $PM_{10}/PM_{2.5}$ | | $SO_2$ | | $NO_X$ | | CO | | VOC | |
|---|---|---|---|---|---|---|---|---|---|---|
| | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr |
| Pre-Project Potential to Emit | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Post Project Potential to Emit | 0.31 | 0.98 | 0.00 | 0.01 | 1.48 | 2.38 | 0.18 | 0.81 | 0.79 | 2.49 |
| **Changes in Potential to Emit** | **0.31** | **0.98** | **0.00** | **0.01** | **1.48** | **2.38** | **0.18** | **0.81** | **0.79** | **2.49** |

As presented previously in Table 5 the pre-project facility-wide potential to emit does not exceed 100 T/yr for PM, SO2, NOx, CO, or VOC. Therefore, a PSD applicability analysis is not required for this project.

## Non-Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) is provided in the following table.

**Table 6 PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS**

| Non-Carcinogenic Toxic Air Pollutants | Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr) | Non-Carcinogenic Screening Emission Level (lb/hr) | Exceeds Screening Level? (Y/N) |
|---|---|---|---|
| Barium | 9.63E-06 | 3.30E-02 | No |
| Butyl Acetate | 6.37E-02 | 4.73E+01 | No |
| Carbon Black | 5.91E-03 | 2.30E-01 | No |
| Chromium | 1.23E-04 | 3.30E-02 | No |
| Cobalt | 1.84E-07 | 3.30E-03 | No |
| Copper | 6.28E-06 | 6.70E-02 | No |
| Dichlorobenezene | 2.63E-06 | 2.00E+01 | No |
| HDI | 1.40E-04 | 2.00E-03 | No |
| Iron Oxide Fume | 4.11E-04 | 3.33E-01 | No |
| Manganese | 9.88E-06 | 6.70E-02 | No |
| Mercury | 5.69E-07 | 3.00E-03 | No |
| 1-methoxy-2-proanol acetate (2-methoxy-1-methylethyl acetate) | 2.95E-02 | 2.40E+01 | No |
| Methyl n-Amyl Ketone | 4.42E-02 | 1.57E+01 | No |
| Molybdenum | 6.69E-06 | 3.33E-01 | No |

| Non-Carcinogenic Toxic Air Pollutants | Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr) | Non-Carcinogenic Screening Emission Level (lb/hr) | Exceeds Screening Level? (Y/N) |
|---|---|---|---|
| Naphthalene | 7.75E-03 | 3.33E+00 | No |
| Phenol | 1.02E-03 | 1.27E+00 | No |
| Phosphorous | 4.16E-06 | 7.00E-03 | No |
| Propyl alcohol | 1.57E-02 | 2.40E+01 | No |
| Selenium | 5.25E-08 | 1.30E-02 | No |
| Silicon | 4.16E-06 | 6.67E-01 | No |
| Trimethyl benzene | 2.59E-03 | 8.20E+00 | No |
| Vanadium | 5.03E-06 | 3.00E-03 | No |
| VM&P Naphtha | 7.63E-03 | 9.13E+01 | No |
| Xylene | 3.18E-01 | 2.90E+01 | No |
| Zinc | 6.34E-05 | 6.67E-01 | No |

None of the emission limits for non-carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average non-carcinogenic screening ELs identified in IDAPA 58.01.01.585 were exceeded.

## Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of carcinogenic toxic air pollutants (TAP) is provided in the following table.

**Table 7 PROJECT POTENTIAL TO EMIT FOR CARCINOGENIC TOXIC AIR POLLUTANTS**

| Carcinogenic Toxic Air Pollutants | Project Annual Average Emissions Rates for Units at the Facility (lb/hr) | Carcinogenic Screening Emission Level (lb/hr) | Exceeds Screening Level? (Y/N) |
|---|---|---|---|
| Arsenic | 4.4E-07 | 1.5E-06 | No |
| Benzene | 4.6E-06 | 8.0E-04 | No |
| Beryllium | 2.6E-08 | 2.8E-05 | No |
| Cadmium | 2.4E-06 | 3.7E-06 | No |
| Chromium+6 | 2.1E-09 | 5.6E-07 | No |
| Formaldehyde | 1.6E-04 | 5.1E-04 | No |
| 3-Methylchloranthene | 3.9E-09 | 2.5E-06 | No |
| Nickel | 2.67E-05 | 2.7E-05 | No |
| Polyaromatic Hydrocarbon (Max) | 1.5E-06 | 9.1E-05 | No |
| Polycyclic Organics: 7-PAH Group[a] | 2.5E-08 | 2.0E-06 | No |

a) Polycyclic Organic Matter (POM) or Polyaromatic Hydrocarbons (7-PAH) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indenol(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

None of the emission limits for carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any carcinogenic TAP because none of the annual average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

## Post Project HAP Emissions

The following table presents the post project potential to emit for HAP pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

**Table 8 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY**

| Hazardous Air Pollutants | PTE (T/yr) |
|---|---|
| Arsenic | 1.916E-06 |
| Benzene | 2.012E-05 |
| Beryllium | 1.150E-07 |
| Cadmium | 1.054E-05 |
| Chromium | 2.366E-04 |
| Cobalt | 8.073E-07 |
| Dichlorobenzene | 1.150E-05 |
| Formaldehyde | 7.187E-04 |
| Hexane | 1.725E-02 |
| HMDI | 4.380E-04 |
| Lead | 4.791E-06 |
| Manganese | 2.381E-04 |
| Mercury | 2.491E-06 |
| Naphthalene | 2.419E-02 |
| Nickel | 1.609E-04 |
| Polycyclic Organic Matter (PAH MAX) | 6.537E-06 |
| Selenium | 2.300E-07 |
| Xylene | 9.930E-01 |
| **Totals** | **1.04** |

### *Ambient Air Quality Impact Analyses*

Facility-wide emission rates of criteria pollutants (PM2.5, PM10, SO2, NOx, VOC, and Pb) were below the "below regulatory concern" (BRC) threshold levels of less than 10% of "significant" emission rates for criteria pollutants defined in IDAPA 58.01.01.006, and therefore modeling was not required.

Facility-wide emission rates of non-carcinogenic and carcinogenic TAP did not exceed applicable screening emission levels (EL) in IDAPA 58.01.01.585–586, and modeling was not required. Estimated emissions of TAP demonstrated compliance with TAP standards in accordance with IDAPA 58.01.01.210.05 for average emission rates.

## REGULATORY ANALYSIS

### *Attainment Designation (40 CFR 81.313)*

The facility is located in Ada County, which is designated as attainment or unclassifiable for $PM_{2.5}$, $PM_{10}$, $SO_2$, $NO_2$, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

### *Facility Classification*

The AIRS/AFS facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

A = Use when any one HAP has actual or potential emissions ≥ 10 T/yr or if the aggregate of all HAPS (Total HAPs) has actual or potential emissions ≥ 25 T/yr.

SM80 = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the permit sets limits ≥ 8 T/yr of a single HAP or ≥ 20 T/yr of THAP.

SM = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the potential HAP emissions are limited to < 8 T/yr of a single HAP and/or < 20 T/yr of THAP.

B = Use when the potential to emit without permit restrictions is below the 10 and 25 T/yr major source threshold

UNK = Class is unknown

For All Other Pollutants:

A = Actual or potential emissions of a pollutant are ≥ 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are ≥ 80 T/yr.

SM = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are < 80 T/yr.

B = Actual and potential emissions are < 100 T/yr without permit restrictions.

UNK = Class is unknown.

**Table 9 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION**

| Pollutant | Uncontrolled PTE (T/yr) | Permitted PTE (T/yr) | Major Source Thresholds (T/yr) | AIRS/AFS Classification |
|---|---|---|---|---|
| PM | 4.59E+01 | 9.78E-01 | **100** | B |
| $PM_{10}$ | 4.59E+01 | 9.78E-01 | **100** | B |
| $PM_{2.5}$ | 4.59E+01 | 9.78E-01 | **100** | B |
| $SO_2$ | 5.75E-03 | 5.75E-03 | **100** | B |
| $NO_X$ | 1.09E+01 | 2.38E+00 | **100** | B |
| CO | 8.05E-01 | 8.05E-01 | **100** | B |
| VOC | 1.03E+01 | 2.49E+00 | **100** | B |
| HAP (single) | 7.83E+00 | 9.93E-01 | **10** | B |
| HAP (total) | 1.63E+01 | 1.04E+00 | **25** | B |
| Pb | 4.79E-06 | 4.79E-06 | **100** | B |

## *Permit to Construct (IDAPA 58.01.01.201)*

IDAPA 58.01.01.201 ..... Permit to Construct Required

A PTC is required for this existing truck repair facility in accordance with Section 7.C of the October 11, 2017 Consent Order agreement between DEQ and Trinity Trailer Manufacturing.

## *Tier II Operating Permit (IDAPA 58.01.01.401)*

IDAPA 58.01.01.401 ..... Tier II Operating Permit

The application was submitted for a permit to construct for an existing truck trailer repair business, and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

### *Visible Emissions (IDAPA 58.01.01.625)*

IDAPA 58.01.01.625 ..... Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 2.5, 3.3, and 4.3.

### *Standards for New Sources (IDAPA 58.01.01.676)*

IDAPA 58.01.01.676 ..... Standards for New Sources

The fuel burning equipment located at this facility, with a maximum rated input of ten (10) million BTU per hour or more, are subject to a particulate matter limitation of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume when combusting gaseous fuels. Fuel-Burning Equipment is defined as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. There is no equipment at this facility that meet this criteria.

### *Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)*

IDAPA 58.01.01.301 ..... Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for $PM_{10}$, $SO_2$, $NO_X$, CO, VOC, and HAP or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

### *PSD Classification (40 CFR 52.21)*

40 CFR 52.21 ..... Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

### *NSPS Applicability (40 CFR 60)*

The facility is not subject to any NSPS requirements 40 CFR Part 60.

### *NESHAP Applicability (40 CFR 61)*

The facility is not subject to any NESHAP requirements in 40 CFR 61.

### *MACT/ GACT Applicability (40 CFR 63)*

40 CFR 63, Subpart MMMM ..... National Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products

§ 63.3880 ..... What is the purpose of this subpart?

In accordance with §63.3890, subpart MMMM establishes national emission standards for hazardous air pollutants (HAP) for area sources involved in miscellaneous metal parts and products surface coating facilities.

§ 63.3881 ..... Am I subject to this subpart?

Trinity Trailer Mfg., Inc. performs surface coating of truck trailers. However, this rule affects miscellaneous metal parts and products surface coating facility that uses two hundred fifty gallons per year or more of coatings that

contain hazardous air pollutants and is a major source, or is located at a major source, or is part of a major source of HAP emissions. Since Trinity Trailer does not use two hundred fifty gallons per year or more of coatings that contain hazardous air pollutants and is not a major source and is not a major source of HAP emissions, this subpart does not apply to Trinity Trailer.

40 CFR 63, Subpart HHHHHH ..... National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources

§ 60.11169 ..... What is the purpose of this subpart?

In accordance with §63.11180, subpart HHHHHH establishes national emission standards for hazardous air pollutants (HAP) for area sources involved in paint stripping operations using methylene chloride, auto body refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations, and spray application of coatings containing target HAPs chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd).

§ 63.11170 ..... Am I subject to this subpart?

Trinity Trailer Mfg., Inc. performs spray application of coatings, as defined in §63.11180, to mobile equipment including operations that are located in stationary structures at fixed locations. Trinity Trailer does not perform paint stripping using methylene chloride. Trinity Trailer is not a major source of HAP, is not located at a major source, and is not part of a major source of HAP emissions.

Trinity Trailer Mfg., Inc. submitted a petition for exemption from 40 CFR §63.11180 to the U.S. EPA May 11, 2017. A response was issued by the EPA Region 10 Stationary Source Manager dated July 21, 2017. The letter indicates that based on the signed certification that none of the coatings sprayed at the Trinity Trailer Mfg., Inc. contain the target HAP, the EPA accepted the petition for exemption from 40 CFR Part 63 Subpart HHHHHH. Consequently, these requirements do not apply to Trinity Trailer.

40 CFR 63, Subpart XXXXXX ..... National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories

§ 60.11169 ..... What is the purpose of this subpart?

In accordance with §63.11522, subpart XXXXXX establishes national emission standards for hazardous air pollutants (HAP) for area sources involved one of the nine source categories in metal fabrication and finishing operations listed in 40 CFR 63 Subpart XXXXXX Table 1.

§ 63.11514 ..... Am I subject to this subpart?

Trinity Trailer Mfg., Inc. truck trailer repair operations are not included under the nine manufacturing subcategories regulated by Table 1, subpart XXXXXX of 40 CFR 63. Trinity Trailer does not manufacture types of products listed under the categories Fabricated Metal Products, Industrial Machinery and Equipment Finishing Operations, or Primary Metal Products Manufacturing, as defined in Table 1, subpart XXXXXX of 40 CFR 63. Also, Trinity Trailer Mfg., Inc. is primarily engaged in truck trailer repair work. The NAICS code for this type of work is 336212, which is not included in the EPA's NAICS source categories that are subject to the requirements of Subpart XXXXXX. Trinity Trailer Mfg., Inc. is, therefore, not subject to regulation by subpart XXXXXX.

## *Permit Conditions Review*

Initial Permit Conditions 1.1 and 1.2

Describe the scope of this permitting action and list the emission sources and activities regulated by this permit.

Initial Permit Conditions 2.1 and 2.2

Describe the scope of welding operations and control devices covered by this permitting action.

Initial Permit Condition 2.3

Specify welding operations emission limits covered by this permitting action.

Initial Permit Conditions 2.4, 3.4, and 4.4

Establish opacity limits as determined by procedures in IDAPA 58.01.01.625.

Initial Permit Condition 2.5, 2.6, and 2.7

Establish limits for welding operations electrode materials as requested by applicant and fume extraction system requirements.

Initial Permit Condition 2.8 and 2.9

Provide requirements for monitoring and recordkeeping for welding material usage limits and fume extractor filter checks/replacement.

Initial Permit Condition 3.1 and 3.2

Describe the scope of plasma cutting operations and control devices covered by this permitting action.

Initial Permit Condition 3.3

Specify plasma cutting operations emission limits covered by this permitting action.

Initial Permit Condition 3.5

Specify plasma cutting tool permitted yearly limits on hours of operation as requested by applicant.

Initial Permit Condition 3.6 and 3.7

Specify fume extraction requirements.

Initial Permit Condition 3.8 and 3.9

Provide requirements for monitoring and recordkeeping for plasma cutting operating hours limits and fume extractor filter checks/replacement.

Initial Permit Condition 4.1 and 4.2

Describe the scope of coating operations covered by this permitting action.

Initial Permit Condition 4.3

Specify coating operations emission limits covered by this permitting action.

Initial Permit Condition 4.5

Establish odor restriction and method to record and address odor complaints.

Initial Permit Condition 4.6

Establish coating daily use limits.

Initial Permit Condition 4.7

HVLP spray gun requirement.

Initial Permit Condition 4.8 and 4.9

Establish coating use recordkeeping requirements and availability of material purchase record with safety data sheets.

Initial Permit Condition 4.10

Establish alternate coating use scenario and restrictions.

Initial Permit Condition 4.11 and 4.12

Establish method for estimating TAP emissions for alternate coatings and demonstrating TAP compliance for alternate coatings.

Initial Permit Condition 4.13

Establish alternate coating method to demonstrate emission limit compliance for $PM_{10}$, VOC, HAP and TAP. Establish method to demonstrate compliance with limits for PM10 and VOC against permitted limits in permit Table 4.2. Establish method to demonstrate compliance with limits for TAP with emission limits or modeled limits in permit Table 4.4. Establish method to demonstrate HAP compliance with regulatory limits.

Initial Permit Condition 4.14

Establish Coating Daily Usage Scenario requirements.

Initial Permit Condition 4.15

Establish Coating Usage Scenario reporting requirements.

Initial Permit Condition 4.16

Specify records and record keeping requirement for alternate coating use.

Initial Permit Condition 5.1

The duty to comply general compliance provision requires that the permittee comply with all of the permit terms and conditions pursuant to Idaho Code §39-101.

Initial Permit Condition 5.2

The maintenance and operation general compliance provision requires that the permittee maintain and operate all treatment and control facilities at the facility in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 5.3

The obligation to comply general compliance provision specifies that no permit condition is intended to relieve or exempt the permittee from compliance with applicable state and federal requirements, in accordance with IDAPA 58.01.01.212.01.

Initial Permit Condition 5.4

The inspection and entry provision requires that the permittee allow DEQ inspection and entry pursuant to Idaho Code §39-108.

Initial Permit Condition 5.5

The permit expiration construction and operation provision specifies that the permit expires if construction has not begun within two years of permit issuance or if construction has been suspended for a year in accordance with IDAPA 58.01.01.211.02.

Initial Permit Condition 5.6

The notification of construction and operation provision requires that the permittee notify DEQ of the dates of construction and operation, in accordance with IDAPA 58.01.01.211.03.

Initial Permit Condition 5.7

The performance testing notification of intent provision requires that the permittee notify DEQ at least 15 days prior to any performance test to provide DEQ the option to have an observer present, in accordance with IDAPA 58.01.01.157.03.

Initial Permit Condition 5.8

The performance test protocol provision requires that any performance testing be conducted in accordance with the procedures of IDAPA 58.01.01.157, and encourages the permittee to submit a protocol to DEQ for approval prior to testing.

Initial Permit Condition 5.9

The performance test report provision requires that the permittee report any performance test results to DEQ within 60 days of completion, in accordance with IDAPA 58.01.01.157.04-05.

Initial Permit Condition 5.10

The monitoring and recordkeeping provision requires that the permittee maintain sufficient records to ensure compliance with permit conditions, in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 5.11

The excess emissions provision requires that the permittee follow the procedures required for excess emissions events, in accordance with IDAPA 58.01.01.130-136.

Initial Permit Condition 5.12

The certification provision requires that a responsible official certify all documents submitted to DEQ, in accordance with IDAPA 58.01.01.123.

Initial Permit Condition 5.13

The false statement provision requires that no person make false statements, representations, or certifications, in accordance with IDAPA 58.01.01.125.

Initial Permit Condition 5.14

The tampering provision requires that no person render inaccurate any required monitoring device or method, in accordance with IDAPA 58.01.01.126.

Initial Permit Condition 5.15

The transferability provision specifies that this permit to construct is transferable, in accordance with the procedures of IDAPA 58.01.01.209.06.

Initial Permit Condition 5.16

The severability provision specifies that permit conditions are severable, in accordance with IDAPA 58.01.01.211.

## PUBLIC REVIEW

### *Public Comment Opportunity*

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there were no comments on the application and there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

# APPENDIX A – EMISSIONS INVENTORIES

Trinity Trailer - Federal Way

## Table 3-1: Heater Combustion Emissions

| Sources | No. of units | Input Duty BTU/hr | MMBtu/hr | | |
|---|---|---|---|---|---|
| H1 Landa Hot Water Pressure Wash | 1 | 668,000 | 0.6680 | MMBtu/hr | Emitted at roof |
| H2 Heater - Plastic Warming | 5 | 65,000 | 0.3250 | MMBtu/hr | Emitted inside shop |
| H3 Heater - Payne Office | 2 | 110,000 | 0.2200 | MMBtu/hr | Emitted at roof |
| H4 Heater - Bryant | 1 | 88,000 | 0.0880 | MMBtu/hr | Emitted at roof |
| H5 Heater - SRP InfraRed Long | 3 | 153,500 | 0.4605 | MMBtu/hr | Emitted at roof |
| H6 Heater - SRP InfraRed Short | 3 | 150,000 | 0.4500 | MMBtu/hr | Emitted at roof |
| H7 Heater - Pan Compressor Room | 1 | 30,000 | 0.0300 | MMBtu/hr | Emitted inside Compressor Room |
| Total | 16 | | 2.23 | | roof+shop |

2.23 MMBtu/hr ÷ 1,020 MMBtu/MMscf 2.19E-03 MMscf/hr

Fuel Use: 0.053 MMscf/day, 19.165 MMscf/year

Operating Assumptions: 24 hr/day, 6,760 hr/yr [3]

| Criteria Air Pollutants | Emission Factor [1] lb/MMscf | Emissions lb/hr | Emissions T/yr |
|---|---|---|---|
| $NO_x$ | 100 | 0.22 | 0.96 |
| CO | 84 | 0.18 | 0.80 |
| $PM_{10}$ | 7.6 | 0.017 | 0.07 |
| $PM_{2.5}$ | 7.6 | 0.017 | 0.07 |
| $SO_2$ | 0.6 | 1.3E-03 | 5.7E-03 |
| VOC | 5.5 | 1.2E-02 | 5.3E-02 |
| Lead | 0.0005 | 1.1E-06 | 4.8E-06 |
| | | 7.9E-04 | lb/month |
| Total Criteria Emissions (ton/yr) = | | | 1.89 |

Greenhouse Gas Emissions [1]

$CO_2$ = 0.054 kg/scf Natural Gas

$CO_2$ = 1.1E+03 Tons/year

$CH_4$ = 0.00103 g/scf Natural Gas

$CH_4$ = 2.2E-02 Tons/year

$N_2O$ = 0.0001 g/scf Natural Gas

$N_2O$ = 2.2E-03 Tons/year

Total $CO_2e = CO_2 + (CH_4 * 25) + (N2O * 298)$

$CO_2e$ = 1145.41 Tons/year

| Hazardous & Toxic Air Pollutants (HAP & TAP) | Emission Factor [1] lb/MMscf | Emissions lb/hr [2] | Emissions T/yr | Modeling Threshold TAP Screening Emission Level | Modeling Required? |
|---|---|---|---|---|---|
| **PAH HAPs** | | | | | |
| 2-Methylnaphthalene | 2.40E-05 | **6.26E-08** | 2.3E-07 | 9.1E-05 lb/hr | No |
| 3-Methylchloranthrene | 1.80E-06 | **3.84E-09** | 1.7E-08 | 2.5E-06 lb/hr | No |
| Acenaphthene | 1.80E-06 | **3.84E-09** | 1.7E-08 | 9.1E-05 lb/hr | No |
| Acenaphthylene | 1.80E-06 | **3.84E-09** | 1.7E-08 | 9.1E-05 lb/hr | No |
| Anthracene | 2.40E-06 | **6.26E-09** | 2.3E-08 | 9.1E-05 lb/hr | No |
| Benzo(a)anthracene | 1.80E-06 | **3.84E-09** | 1.7E-08 | | See POM |
| Benzo(a)pyrene | 1.20E-06 | **2.63E-09** | 1.1E-08 | 2.0E-06 lb/hr | See POM |
| Benzo(b)fluoranthene | 1.80E-06 | **3.84E-09** | 1.7E-08 | | See POM |
| Benzo(g,h,i)perylene | 1.20E-06 | **2.63E-09** | 1.1E-08 | 9.1E-05 lb/hr | No |
| Benzo(k)fluoranthene | 1.80E-06 | **3.84E-09** | 1.7E-08 | | See POM |
| Chrysene | 1.80E-06 | **3.84E-09** | 1.7E-08 | | See POM |
| Dibenzo(a,h)anthracene | 1.20E-06 | **2.63E-09** | 1.1E-08 | | See POM |
| Fluoranthene | 3.00E-06 | **6.58E-09** | 2.9E-08 | 9.1E-05 lb/hr | No |
| Fluorene | 2.80E-06 | **6.13E-09** | 2.7E-08 | 9.1E-05 lb/hr | No |
| Indeno(1,2,3-cd)pyrene | 1.80E-06 | **3.84E-09** | 1.7E-08 | | See POM |
| Naphthalene | 6.10E-04 | 1.33E-06 | 5.8E-06 | 3.33 lb/hr | No |
| Naphthalene | 6.10E-04 | **1.33E-06** | 5.8E-06 | 9.1E-05 lb/hr | No |
| Phenanathrene | 1.70E-05 | **3.72E-08** | 1.6E-07 | 9.1E-05 lb/hr | No |
| Pyrene | 5.00E-06 | **1.09E-08** | 4.8E-08 | 9.1E-05 lb/hr | No |
| PAH Max. total | | **1.6E-06** | **6.9E-06** | | |
| Polycyclic Org. Matter (POM, 7-PAH Group) | | **2.48E-08** | **1.1E-07** | 2.0E-06 lb/hr | No |
| **Non-PAH HAPs** | | | | | |
| Benzene | 2.10E-03 | **4.59E-06** | 2.0E-05 | 8.0E-04 lb/hr | No |
| Dichlorobenzene | 1.20E-03 | 2.63E-06 | 1.1E-05 | 20 lb/hr | No |
| Formaldehyde | 7.50E-02 | **1.64E-04** | 7.2E-04 | 5.1E-04 lb/hr | No |
| Hexane | 1.80E+00 | 3.94E-03 | 1.7E-02 | 12 lb/hr | No |
| Toluene | 3.40E-03 | 7.44E-06 | 3.3E-05 | 25 lb/hr | No |
| **Non-HAP Organic Compounds** | | | | | |
| Pentane | 2.60E+00 | 5.69E-03 | 2.5E-02 | 118 lb/hr | No |
| **Metals (HAPs)** | | | | | |
| Arsenic | 2.00E-04 | **4.38E-07** | 1.9E-06 | 1.5E-06 lb/hr | No |
| Barium | 4.40E-03 | 9.63E-06 | 4.2E-05 | 0.033 lb/hr | No |
| Beryllium | 1.20E-05 | **2.63E-08** | 1.1E-07 | 2.8E-06 lb/hr | No |
| Cadmium | 1.10E-03 | **2.41E-06** | 1.1E-05 | 3.7E-06 lb/hr | No |
| Chromium | 1.40E-03 | 3.06E-06 | 1.3E-05 | 0.033 lb/hr | No |
| Cobalt | 8.40E-05 | 1.84E-07 | 8.0E-07 | 0.0033 lb/hr | No |
| Copper | 8.50E-04 | 1.86E-06 | 8.1E-06 | 0.013 lb/hr | No |
| Manganese | 3.80E-04 | 8.31E-07 | 3.6E-06 | 0.067 lb/hr | No |
| Mercury | 2.60E-04 | 5.69E-07 | 2.5E-06 | 0.003 lb/hr | No |
| Molybdenum | 1.10E-03 | 2.41E-06 | 1.1E-05 | 0.333 lb/hr | No |
| Nickel | 2.10E-03 | **4.59E-06** | 2.0E-05 | 2.7E-05 lb/hr | No |
| Selenium | 2.40E-05 | 5.25E-08 | 2.3E-07 | 0.013 lb/hr | No |
| Vanadium | 2.30E-03 | 5.03E-06 | 2.2E-05 | 0.003 lb/hr | No |
| Zinc | 2.90E-02 | 6.34E-05 | 2.8E-04 | 0.667 lb/hr | No |
| Total HAP Emissions (ton/yr) = | | | 0.018 | | |

Notes:

1. Emission factors taken from AP-42, Section 1.4 Natural Gas Combustion (7/98)
2. TAPs lb/hr emissions are 24-hour averages unless shown in bold. Bold emissions are annual averages for carcinogens.
3. Booth Make-up Air heater is used only during cold weather, so actual on-line rating is significantly less.

Table 3-2 Welding Emissions

| | TAP/HAP Metal | Al | Cr | Cr+6 | Cu | Fe | Mg | Mn | Molyb | Ni | Silicon | Zn | Titanium | Be | Co | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Welding Process/Electrode | CAS No | 7440-47-3 | 7440-47-3 | | 7440-50-8 | 7439-89-6 | 7439-96-5 | 7439-96-5 | 7439-98-7 | 7440-21-3 | 7440-21-3 | 7440-66-6 | | 7440-41-7 | 7440-48-4 | |
| Carbon Fillers | Restricted Monthly Use (lbs.)[4] | Al | Cr | Cr+6 | Cu | Fe | Mg | Mn | Molyb | Ni | Silicon | Zn | Titanium | Be | Co | P |
| Quantum Arc ER90S-D2 Hobart[2] | 39.4 | 0.1% | | | 5.0% | 90.0% | | 1.0% | 1.9% | | 5.0% | | 0.2% | | | |
| Lincoln BLUE MAX, mig 308LSi[3] | 40.3 | | 50.0% | | 1.0% | 100.0% | | 5.0% | 1.0% | 20.0% | 1.0% | | | | 1.0% | |
| | | | | | | | | | | | | | | | | |
| TAP | | X | X | X | X | X | X | X | X | X | X | X | | X | X | X |
| HAP | | | X | X | | | | X | | X | | | | X | X | |
| | PM | Al | Cr | Cr+6 | Cu | Fe | Mg | Mn | Molyb | Ni | Silicon | Zn | Titanium | Be | Co | P |
| SDAPCD w/ GMAW/SMAW NASSCO fume correction[1] | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Table 12.19-1 and SDAPCD w/NASSCO fume correction[1] | X | X | | | X | X | X | | X | | X | X | X | X | | X |
| Table 12.19-2[1] | | | X | X | | | | X | | X | | | | | X | |
| SDAPCD Unspecified Process | | | | | | | | | | | | | | | | |
| IDEQ EL Dust (lbs./hr.) | --- | 6.7E-01 | 3.3E-02 | 5.6E-07 | 6.7E-02 | --- | --- | 3.3E-01 | 6.7E-01 | 2.70E-05 | 6.7E-01 | 6.7E-01 | --- | 2.80E-05 | 3.30E-03 | 7.0E-03 |
| Restricted Uncontrolled PM and TAP Fume lbs/yr | 5.2E+00 | 2.6E-03 | 2.5E-01 | 0.0E+00 | 1.6E-01 | 4.9E+00 | 0.0E+00 | 4.3E-01 | 7.5E-02 | 8.9E-02 | 1.6E-01 | 0.0E+00 | 5.2E-03 | 0.0E+00 | 4.6E-06 | 0.0E+00 |
| Restricted Uncontrolled PM and TAP Fume lbs/month | 4.32E-01 | 2.2E-04 | 2.1E-02 | 0.0E+00 | 1.3E-02 | 4.1E-01 | 0.0E+00 | 3.5E-02 | 6.3E-03 | 7.4E-03 | 1.3E-02 | 0.0E+00 | 4.3E-04 | 0.0E+00 | 0.0 | 0.0E+00 |
| Restricted Uncontrolled PM and TAP Hourly (24-hour average 555 TAPs, annual-average 586 TAPs) Fume Emissions lbs/hr | 2.01E-04 | 4.5E-07 | 4.4E-05 | 0.0E+00 | 2.7E-05 | 8.6E-04 | 0.0E+00 | 7.4E-05 | 1.3E-05 | 1.01E-05 | 2.7E-05 | 0.0E+00 | 9.0E-07 | 0.0E+00 | 8.4E-10 | 0.0E+00 |
| Restricted Controlled PM and TAP Fume lbs/yr | 5.19E-02 | 2.56E-05 | 2.53E-03 | 0.00E+00 | 1.55E-03 | 4.93E-02 | 0.00E+00 | 4.25E-03 | 7.51E-04 | 8.89E-04 | 1.55E-03 | 0.00E+00 | 5.18E-05 | 0.00E+00 | 4.83E-08 | 0.00E+00 |
| Restricted Controlled PM and TAP Fume lbs/month | 4.32E-03 | 2.15E-06 | 2.11E-04 | 0.00E+00 | 1.29E-04 | 4.11E-03 | 0.00E+00 | 3.54E-04 | 6.26E-05 | 7.41E-05 | 1.29E-04 | 0.00E+00 | 4.30E-06 | 0.00E+00 | 4.03E-09 | 0.00E+00 |
| Restricted Controlled PM and TAP Hourly (24-hour average 586 TAPs, annual-average 586 TAPs) Fume Emissions lbs/hr | 2.01E-06 | 4.48E-09 | 4.39E-07 | 0.00E+00 | 2.69E-07 | 8.56E-06 | 0.00E+00 | 7.38E-07 | 1.30E-07 | 1.01E-07 | 2.69E-07 | 0.00E+00 | 8.98E-09 | 0.00E+00 | 8.38E-12 | 0.00E+00 |
| IDEQ EL Fume (lbs./hr.) | | --- | --- | --- | 1.3E-02 | 3.3E-01 | 6.7E-01 | 6.7E-02 | --- | --- | --- | 3.330E-01 | --- | --- | 0.003 | --- |
| Uncontrolled PM2.5 <BRC 1 ton/yr | Yes | | | | | | | | | | | | | | | |
| Uncontrolled TAP <BRC 10% EL | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | NA | Yes | Yes | Yes |
| Uncontroled TAP < EL | | Yes | Yes | Yes<br>0% | Yes | Yes | Yes | Yes<br>0.02% | Yes | Yes<br>38% | Yes | Yes | NA | Yes | Yes | Yes |
| Controlled TAP <EL | | Yes | Yes | Yes<br>0% | Yes | Yes | Yes | Yes<br>0.000% | Yes | Yes<br>0% | Yes | Yes | Yes | Yes | Yes | Yes |
| Assume Production 8 hrs./day; 5 days/week | | | | | | | | | | | | | | | | |
| Conservative Production Factor Increase | 175% | | | | | | | | | | | | | | | |
| Kemper Fume Control Efficiency | 99% | | | | | | | | | | | | | | | |

[4]Dean Hearst: 0.5 spools/month, 45 lbs./spool Hobart Quantum Arc 02; 1 spools/month, 25 lbs./spool Lincoln Blue MAX; assume Production Increase Factor 300%.

[2]Hobart ER90S-D2 not listed in AP-42; apply SDAPCD and NASSCO emission factors.

[3]Lincoln BLUE MAX, mig 308LSi listed in AP-42; apply AP-42 emission factors for listed PM/TAPs/HAPs; apply apply SDAPCD and NASSCO emission factors for unlisted TAPs/HAPs.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Hobart GMAW E705 | 5.2 lbs/1000 lbs electrode | | | 0.52% fume generation | | | |
| TAP | Cr | Cr+6 | Cobalt | Mn | Ni | Pb | |
| | 0.0001% | ND | 0.0001% | 0.03% | 0.0001% | ND | |
| Lincoln Electric and Harris GMAW 308L, 308LSi | 5.4 lbs/1000 lbs electrode | | | 0.54% fume generation | | | |
| TAP | Cr | Cr+6 | Cobalt | Mn | Ni | Pb | |
| | 0.0524% | ND | 0.0001% | 0.03% | 0.0184% | ND | |
| Lincoln Electric Weld Flux 781 EM12K1 | 0.05 lbs/1000 lbs electrode | | | 0.01% fume generation | | | |
| TAP | Cr | Cr+6 | Cobalt | Mn | Ni | Pb | |
| | ND | ND | ND | ND | ND | ND | |
| FCAW Hobart Excel-71M E71-T1 | 12.2 lbs/1000 lbs electrode | | | 1.22% fume generation | | | |
| TAP | Cr | Cr+6 | Cobalt | Mn | Ni | Pb | |
| | 0.02% | ND | 0.01% | 0.63% | 0.04% | ND | |

Calculation Method Without AP-42 Emission Factors
Eh = max hourly emissions of each TAP  Ea= annual emissions of each TAP
Ea= Ua X EF (fume rate rod lbs fume/lbs rod) X Nasso fume Correction Factor X Concentration metal
Eh=Uh X EF (fume rate rod lbs fume/lbs rod) X Nasso fume Correction Factor X Concentration metal

[1]SDAPCD G99 Gas Metal Arc Weldging (GMAW), Unspecified Electrode, General District-ARB-NASSCO GMAW Emission Estimation Procedure

default fume rates GMAW, MIG, TIG  1% lbs fume/lbs r
default fume rates SMAW, FCAW  2%
default fume rates unspecified  5%

default fume Correction Factor GMAW, MIG,  0.5464
default fume Correction Factor SMAW, FCAW  0.2665
default fume Correction Factor unspecified  1.0

default Cr+6 conversion rates GMAW, MIG, T  0.05
default Cr+6 conversion rates SMAW, FCAW  0.63
default Cr+6 conversion rates unspecified  0.1

default emission factor (lbs./lbs rod)  CI ( lbs. TAP/lbs. rod)

PM10 (PM2.5)  0.01
Cr+3  0.01*0.5464*.95*CI  #REF!
Cr+6  0.01*0.5464*.05*CI  #REF!
Cobalt  0.01*0.5464*CI
Manganese  0.01*0.5464*CI
Nickel  0.01*0.5464*CI
Lead  0.01*0.5464*CI
Metals w/o EF  0.01*0.5464*CI

## Table 3-3 Plasma Cutting Emissions

| | Material | Estimated Max Unrestricted Hours Operation[1] | | Estimated Max Restricted Hours Operation[2] | | TAP Constituents[3] | CAS Number | Constituent Concentration (max wt%)[3] | Emission Factor (lbs./hr.)[4] | Unrestricted Uncontrolled Emissions | | Restricted Uncontrolled Emissions | | Cyclone Efficiency (%) | Control Equipment Efficiency | Unrestricted Controlled Emissions | | Restricted Controlled Emissions | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | hrs./day | hrs./yr | hrs./day | hrs./yr | | | | | lb/hr | lb/yr | lb/hr | lb/yr | | | lb/hr | lb/yr | lb/hr | lb/yr |
| Plasma Cutter | Stainless Steel | 43.50 | 15,877.5 | 14.50 | 2,262 | Chromium | 7440-47-3 | 18.646% | 5.28 | 1.8E+00 | 1.6E+04 | 6.0E-01 | 2.2E+03 | | 99.98% | 3.6E-04 | 3.1E+00 | 1.2E-04 | 4.5E-01 |
| | | | | | | Chromium +6[5] | 7440-47-3 | Not Reported | | 7.4E-05 | 6.5E-01 | 1.1E-05 | 9.3E-02 | | | 1.5E-08 | 1.3E-04 | 2.1E-09 | 1.9E-05 |
| | | | | | | Copper | 7440-50-8 | 0.521% | | 5.0E-02 | 4.4E+02 | 1.7E-02 | 6.2E+01 | | | 1.0E-05 | 8.8E-02 | 3.3E-06 | 1.2E-02 |
| | | | | | | Iron | 1309-37-1 | 70% | | 6.7E+00 | 5.9E+04 | 2.2E+00 | 8.4E+03 | | | 1.3E-03 | 1.2E+01 | 4.5E-04 | 1.7E+00 |
| | | | | | | Manganese | 7439-96-5 | 1.825% | | 1.8E-01 | 1.5E+03 | 5.8E-02 | 2.2E+02 | | | 3.5E-05 | 3.1E-01 | 1.2E-05 | 4.4E-02 |
| | | | | | | Molybdenum | 7439-98-7 | 0.3660% | | 3.5E-02 | 3.1E+02 | 1.2E-02 | 4.4E+01 | | | 7.0E-06 | 6.1E-02 | 2.3E-06 | 8.8E-03 |
| | | | | | | Nickel | 7440-02-0 | 8.053% | | 7.7E-01 | 6.8E+03 | 1.1E-01 | 9.6E+02 | | | 1.5E-04 | 1.4E+00 | 2.2E-05 | 1.9E-01 |
| | | | | | | Phosphorus | 7723-14-0 | 0.032% | | 3.1E-03 | 2.7E+01 | 1.0E-03 | 3.8E+00 | | | 6.1E-07 | 5.4E-03 | 2.0E-07 | 7.7E-04 |
| | | | | | | Silicon | | 0.278% | | 2.7E-02 | 2.3E+02 | 8.9E-03 | 3.3E+01 | | | 5.3E-06 | 4.7E-02 | 1.8E-06 | 6.7E-03 |
| | | | | | | Carbon | | 0.0464% | | 4.4E-03 | 3.9E+01 | 1.5E-03 | 5.6E+00 | | | 8.9E-07 | 7.8E-03 | 3.0E-07 | 1.1E-03 |
| | | | | | | Nitrogen | | 0.0794% | | 7.6E-03 | 6.7E+01 | 2.5E-03 | 9.5E+00 | | | 1.5E-06 | 1.3E-02 | 5.1E-07 | 1.9E-03 |
| | | | | | | Sulfur | | 0.0015% | | 1.4E-04 | 1.3E+00 | 4.8E-05 | 1.8E-01 | | | 2.9E-08 | 2.5E-04 | 9.6E-09 | 3.6E-05 |
| | Steel | 43.50 | 15,877.5 | 14.50 | 2,262 | Chromium | 7440-47-3 | 1.0% | 3.439 | 6.2E-02 | 5.5E+02 | 2.1E-02 | 7.8E+01 | | 99.98% | 1.2E-05 | 1.1E-01 | 4.2E-06 | 1.6E-02 |
| | | | | | | Chromium +6[5] | 7440-47-3 | | | 4.0E-06 | 3.5E-02 | 5.7E-07 | 5.0E-03 | | | 8.0E-10 | 7.0E-06 | 1.1E-10 | 1.0E-06 |
| | | | | | | Copper | 7440-50-8 | 1.0% | | 6.2E-02 | 5.5E+02 | 2.1E-02 | 7.8E+01 | | | 1.2E-05 | 1.1E-01 | 4.2E-06 | 1.6E-02 |
| | | | | | | Iron | 1309-37-1 | 99.0% | | 6.2E+00 | 5.4E+04 | 2.1E+00 | 7.7E+03 | | | 1.2E-03 | 1.1E+01 | 4.1E-04 | 1.5E+00 |
| | | | | | | Manganese | 7439-96-5 | 2.0% | | 1.2E-01 | 1.1E+03 | 4.2E-02 | 1.6E+02 | | | 2.5E-05 | 2.2E-01 | 8.3E-06 | 3.1E-02 |
| | | | | | | Molybdenum | 7439-98-7 | 1.0% | | 6.2E-02 | 5.5E+02 | 2.1E-02 | 7.8E+01 | | | 1.2E-05 | 1.1E-01 | 4.2E-06 | 1.6E-02 |
| | | | | | | Nickel | 7440-02-0 | 1.0% | | 6.2E-02 | 5.5E+02 | 8.9E-03 | 7.8E+01 | | | 1.2E-05 | 1.1E-01 | 1.8E-06 | 1.6E-02 |
| | | | | | | Phosphorus | 7723-14-0 | 1.0% | | 6.2E-02 | 5.5E+02 | 2.1E-02 | 7.8E+01 | | | 1.2E-05 | 1.1E-01 | 4.2E-06 | 1.6E-02 |
| | | | | | | Silicon | | 1.0% | | 6.2E-02 | 5.5E+02 | 2.1E-02 | 7.8E+01 | | | 1.2E-05 | 1.1E-01 | 4.2E-06 | 1.6E-02 |
| | | | | | | Carbon | | 1.0% | | 6.2E-02 | 5.5E+02 | 2.1E-02 | 7.8E+01 | | | 1.2E-05 | 1.1E-01 | 4.2E-06 | 1.6E-02 |
| | | | | | | Nitrogen | | | | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | | | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| | | | | | | Sulfur | | 1.0% | | 6.2E-02 | 5.5E+02 | 2.1E-02 | 7.8E+01 | | | 1.2E-05 | 1.1E-01 | 4.2E-06 | 1.6E-02 |
| | Conservative Production Factor Increase | 145% | | | | | | | | | | | | | | | | | |

**Stainless**

| TAP Emissions Summary | TAP Type (24 hr or Annual Avgd EL) | EL | Unrestricted Uncontrolled Emission | Restricted Uncontrolled Emission | Restricted Controlled Emissions (lb/hr) | Unrestricted Uncontrolled TAP Less | Restricted Controlled TAP Less Than EL | Restricted Controlled TAP % of EL |
|---|---|---|---|---|---|---|---|---|
| Chromium | 585 (24 hr) | 3.30E-02 | 1.8E+00 | 6.0E-01 | 1.2E-04 | No | Yes | 0.4% |
| Chromium+6 | 586 (Annual) | 5.60E-07 | 7.4E-05 | 1.1E-05 | 2.1E-09 | No | Yes | 0.4% |
| Copper Fume | 585 (24 hr) | 1.30E-02 | 5.0E-02 | 1.7E-02 | 3.3E-06 | No | Yes | 0.03% |
| Iron Oxide Fume | 585 (24 hr) | 3.33E-01 | 6.7E+00 | 2.2E+00 | 4.5E-04 | No | Yes | 0.13% |
| Manganese Fume | 585 (24 hr) | 6.70E-02 | 1.8E-01 | 5.8E-02 | 1.2E-05 | No | Yes | 0.02% |
| Molybdenum | 585 (24 hr) | 3.33E-01 | 3.5E-02 | 1.2E-02 | 2.3E-06 | Yes | Yes | 0.0007% |
| Nickel | 586 (Annual) | 2.75E-05 | 7.7E-01 | 1.1E-01 | 2.2E-05 | No | Yes | 80.0% |
| Phosphorus | 585 (24 hr) | 7.00E-03 | 3.1E-03 | 1.0E-03 | 2.0E-07 | Yes | Yes | 0.003% |
| Silicon | 585 (24 hr) | 6.67E-01 | 2.7E-02 | 8.9E-03 | 1.8E-06 | Yes | Yes | 0.0003% |

| HAP Emissions Summary | Restricted Controlled Emission | Restricted Controlled Emission |
|---|---|---|
| Chromium | 4.5E-01 | 2.2E-04 |
| Manganese | 4.4E-02 | 2.2E-05 |
| Nickel | 1.9E-01 | 9.6E-05 |

**Steel**

| TAP Emissions Summary | TAP Type (24 hr or Annual Avgd EL) | EL | Unrestricted Uncontrolled Emission | Restricted Uncontrolled Emission | Restricted Controlled Emissions (lb/hr) | Unrestricted Uncontrolled TAP Less | Restricted Controlled TAP Less Than EL | Restricted Controlled TAP % of EL |
|---|---|---|---|---|---|---|---|---|
| Chromium | 585 (24 hr) | 3.30E-02 | 6.2E-02 | 2.1E-02 | 4.2E-06 | No | Yes | 0.01% |
| Chromium+6 | 586 (Annual) | 5.60E-07 | 4.0E-06 | 5.7E-07 | 1.1E-10 | No | Yes | 0.02% |
| Copper Fume | 585 (24 hr) | 1.30E-02 | 6.2E-02 | 2.1E-02 | 4.2E-06 | No | Yes | 0.03% |
| Iron Oxide Fume | 585 (24 hr) | 3.33E-01 | 6.2E+00 | 2.1E+00 | 4.1E-04 | No | Yes | 0.1% |
| Manganese Fume | 585 (24 hr) | 6.70E-02 | 1.2E-01 | 4.2E-02 | 8.3E-06 | No | Yes | 0.01% |
| Molybdenum | 585 (24 hr) | 3.33E-01 | 6.2E-02 | 2.1E-02 | 4.2E-06 | Yes | Yes | 0.001% |
| Nickel | 586 (Annual) | 2.75E-05 | 6.2E-02 | 8.9E-03 | 1.8E-06 | No | Yes | 6.5% |
| Phosphorus | 585 (24 hr) | 7.00E-03 | 6.2E-02 | 2.1E-02 | 4.2E-06 | No | Yes | 0.06% |
| Silicon | 585 (24 hr) | 6.67E-01 | 6.2E-02 | 2.1E-02 | 4.2E-06 | Yes | Yes | 0.0006% |

| HAP Emissions Summary | Restricted Controlled Emission | Restricted Controlled Emission |
|---|---|---|
| Chromium | 1.6E-02 | 7.8E-06 |
| Manganese | 3.1E-02 | 1.6E-05 |
| Nickel | 1.6E-02 | 7.8E-06 |

**Combined Stainless and Steel**

| TAP Emissions Summary | TAP Type (24 hr or Annual Avgd EL) | EL | Unrestricted Uncontrolled Emission | Restricted Uncontrolled Emission | Restricted Controlled Emissions (lb/hr) | Unrestricted Uncontrolled TAP Less | Restricted Controlled TAP Less Than EL | Restricted Controlled TAP % of EL |
|---|---|---|---|---|---|---|---|---|
| Chromium | 585 (24 hr) | 3.30E-02 | 1.9E+00 | 6.2E-01 | 1.2E-04 | No | Yes | 0.4% |
| Chromium+6 | 586 (Annual) | 5.60E-07 | 7.8E-05 | 1.1E-05 | 2.2E-09 | No | Yes | 0.4% |
| Copper Fume | 585 (24 hr) | 1.30E-02 | 1.1E-01 | 3.7E-02 | 7.5E-06 | No | Yes | 0.06% |
| Iron Oxide Fume | 585 (24 hr) | 3.33E-01 | 1.3E+01 | 4.3E+00 | 8.6E-04 | No | Yes | 0.3% |
| Manganese Fume | 585 (24 hr) | 6.70E-02 | 3.0E-01 | 1.0E-01 | 2.0E-05 | No | Yes | 0.03% |
| Molybdenum | 585 (24 hr) | 3.33E-01 | 9.7E-02 | 3.2E-02 | 6.5E-06 | Yes | Yes | 0.002% |
| Nickel | 586 (Annual) | 2.75E-05 | 8.5E-01 | 1.2E-01 | 2.38E-05 | No | Yes | 86.5% |
| Phosphorus | 585 (24 hr) | 7.00E-03 | 6.5E-02 | 2.2E-02 | 4.4E-06 | No | Yes | 0.06% |
| Silicon | 585 (24 hr) | 6.67E-01 | 8.9E-02 | 3.0E-02 | 5.9E-06 | Yes | Yes | 0.0009% |

| HAP Emissions Summary | Restricted Controlled Emission | Restricted Controlled Emission |
|---|---|---|
| Chromium | 4.6E-01 | 2.3E-04 |
| Manganese | 7.5E-02 | 3.7E-05 |
| Nickel | 2.1E-01 | 1.0E-04 |

**Stainless**

| Criteria Pollutant Emissions Summary | Unrestricted Uncontrolled | Unrestricted Uncontrolled | Unrestricted Uncontrolled | Restricted Uncontrolled | Restricted Uncontrolled Emissions (lbs./yr) | Restricted Uncontrolled | Restricted Controlled Emissions (lbs./hr) | Restricted Controlled | Restricted Controlled |
|---|---|---|---|---|---|---|---|---|---|
| $PM_{10}$ | 3.590 | 84008.488 | 42.0042 | 3.19667 | 11968.33248 | 5.98417 | 0.00084 | 2.39367 | 0.00120 |

**Steel**

| Criteria Pollutant Emissions Summary | Unrestricted Uncontrolled | Unrestricted Uncontrolled | Unrestricted Uncontrolled | Restricted Uncontrolled | Restricted Uncontrolled Emissions (lbs./yr) | Restricted Uncontrolled | Restricted Controlled Emissions (lbs./hr) | Restricted Controlled | Restricted Controlled |
|---|---|---|---|---|---|---|---|---|---|
| $PM_{10}$ | 6.234 | 54605.517 | 27.3028 | 2.07784 | 7779.41611 | 3.88971 | 0.0004 | 1.55588 | 0.00078 |

**Combined Stainless and Steel**

| Criteria Pollutant Emissions Summary | Unrestricted Uncontrolled Emissions (lbs./hr.) | Unrestricted Uncontrolled Emissions (lbs./yr) | Unrestricted Uncontrolled Emissions (tons/yr) | Restricted Uncontrolled Emissions (lbs./hr) | Restricted Uncontrolled Emissions (lbs./yr) | Restricted Uncontrolled Emissions (tons/yr) | Restricted Controlled Emissions (lbs./hr) | Restricted Controlled Emissions (lbs./yr) | Restricted Controlled Emissions (tons/yr) |
|---|---|---|---|---|---|---|---|---|---|
| $PM_{10}$ | 15.824 | 138614.005 | 69.3070 | 5.27451 | 19747.74859 | 9.87387 | 0.0011 | 3.94955 | 0.00197 |

**NOx Calculations:**

| Gas | density | pecific grav e 0.001189 lbs NO2/liter |
|---|---|---|
| NO2 | X | 1.58 |
| Air | 1.205 kg/m3 | 1.00 |

sp. Grav gas = pGas/pAir

(X) / 1.205 = 1.58 1.58 * 1.205 = X = 1.904 kg/m3 NO2

1.904 kg NO2/m3 =

Emission Factor[7] 4.4-5.5 liters NOx/minute dry steel and stainless steel 8 mm

@ 5 l/min NOx (5 liters/min ) X (4.189E-3 lbs NO2/liter) = 0.0209 lbs NO2/min

assume NOx=NO2 2.1E-2 lbs NO2/min X 60 min/hr = 1.257 lbs NO2/hr

| NOx lbs/hr | lbs/yr @8760 hrs/yr | tons/yr @8760 hrs/yr | lbs/yr @restricted hrs/yr | tons/yr @restricted hrs/yr | % of BRC |
|---|---|---|---|---|---|
| 1.257 | 19350.0 | 10.0 | 2643.3 | 1.42 | 35.5% |

1 gram = 0.0022046 lbs

**Notes**

1. Unrestricted uncontrolled media usage based on maximum actual use rate prorated from 8 hrs/day, 5 days/week, 50 weeks/yr (2000 hrs/yr) to 24 hrs/day, 7 days/week, 52 weeks/yr (8760 hrs/yr) dry cutting.
2. Trinity Trailer estimates cutting operations 10 hrs /day steel or stainless steel, 2 days/week. Conservative estimate based on 10 hrs /day steel and stainless steel, production factor increase, and 3 days/week.
3. TAP material composition for stainless steel from highest values in 6 tests listed on 2 metallurgical test reports for stainless steel provided by North American Stainless and 4 test reports for stainless steel tubing provided by Fisher Group. TAP material composition for steel from example steel SDS.
4. 40 grams/minute dry cutting stainless steel and 26 grams/minute dry cutting steel, EPA AP-42, Chapter 12, Other Emission Factor Documents, "Emission of fume, nitrogen oxides and noise in plasma cutting of stainless and mild steel", Bromssen B. et al, The Swedish Institute of Production Engineering Research, March, 1994, http://www.epa.gov/ttn/chief/efdocs/welding.pdf
5. Air Flow Systems, Inc. DustPak2 99.9% main filter with 99.97% secondary filter; Efficiency = 100% - (100% * (1- 999)*(1- 9997)) = 99.99997% For conservative estimate apply 99.99%
6. Emission Factor 0.00022 lbs Cr+6/lbs per lb Cr, From SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, PAGE 1 of 9, APP. NUMBERS 460171/2, Coating, Printing, Aerospace and Chemical Operations Team, Reviewed by APPLICATION PROCESSING AND CALCULATIONS DATE 07/30/1998, AMERICAN SECURITY PRODUCTS, INC., Jul-08
7. 4.4-5.5 liters NOx/minute dry cutting 8mm steel and stainless steel, EPA AP-42, Chapter 12, Other Emission Factor Documents, "Emission of fume, nitrogen oxides and noise in plasma cutting of stainless and mild steel".

## Coating Emissions:

| Max. PTE Unrestricted Daily Use (gal/day) | Max. PTE Unrestricted Annual Use (gal/year) | Maker | Coating Material (see Notes) | Density | Solids | VOC (non-exempt) | Propyl alcohol 71-23-8 | naphthalene 91-20-3 | trimethyl benzene 95-63-6 25551-13-7 | 1-methoxy-2-proanol acetate 108-65-6 | Phenol 108-905-2 | methyl n-amyl ketone 110-43-0 | butyl acetate 123-86-4 | hexamethylene diisocyanate monomer 822-06-0 | carbon black 1333-86-4 | naphtha (petroleum), light aromatic 64742-95-6 64742- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | lb/gal | Weight Percentage Content Data | | | | | | | | | | | |
| 0.155 | 40.3 | PPG | AMERCOAT 101 PRIMER THINNER | 7.43 | 0.00% | 100.00% | | 10% | 1.7% | | | | | | | |
| 0.24 | 62.5 | PPG | AMERCOAT 370 CURE (Primer) | 7.84 | 80% | 20% | 20% | | | | 1% | | | | | |
| 0.620 | 161.2 | PPG | AMERCOAT 370 PEARL GRAY RESIN (Primer) | 15.69 | 83% | 17% | | | | | | | | | | |
| 0.120 | 31.2 | PPG | AMERCOAT 866M ACCELERATOR (Topcoat) | 8.18 | 1.27% | 98.77% | | | | | | | | | | |
| 0.24 | 62.5 | PPG | AMERSHIELD CURE (Topcoat) | 9.35 | 90.00% | 10.00% | | | 1.90% | | | | 5.00% | 1.00% | | 5.00% |
| 0.155 | 40.3 | PPG | AMERCOAT 923 TOPCOAT THINNER | 6.84 | 0.00% | 100.00% | | | | | | 100.00% | | | | |
| | 0 | PPG | AMERSHIELD BLACK RESIN | 10.77 | 74.53% | 25.47% | | | | | | | 20.00% | | 5.00% | |
| | 0 | PPG | AMERSHIELD DEEP TINT RESIN | 11.43 | 79.69% | 20.31% | | 1.00% | | | | | 20.00% | | | |
| | 0 | PPG | AMERSHIELD LIGHT TINT RESIN | 11.18 | 77.13% | 22.87% | | 1.00% | | | | | 20.00% | | | |
| | 0 | PPG | AMERSHIELD NEUTRAL TINT RESIN | 11.18 | 81.14% | 18.86% | | | | | | | 20.00% | | | |
| | 0 | PPG | AMERSHIELD BRIGHT RED RESIN | 10.28 | 72.61% | 27.39% | | | | | | | 20.00% | | | |
| | 0 | PPG | AMERSHIELD TRINITY WHITE RESIN | 11.18 | 74.87% | 25.13% | | | | | | | 20.00% | | | |
| | | PPG | AMERSHIELD RED TINT RESIN | 10.35 | 74.58% | 25.42% | | | | 10.00% | | | 20.00% | | | |
| | | PPG | AMERSHIELD HIGH HIDING YELLOW TINT | 9.76 | 72.48% | 27.52% | | | | 10.00% | | | 18.00% | | | 1.00% |
| 0.620 | 161.2 | PPG | Composite Topcoat Finish Paint | 11.43 | 0.81 | 0.28 | 0% | 1% | 0% | 10% | 0% | 0% | 20% | 0% | 5% | 1% |
| 0.01511 | 3.9 | Eastwood | Aerosol Injected Cleaner | 5.98 | 1.00% | 8.00% | | | | | | | | | | |

Total gallons/day 2.2

Total gallons/yea 522.8

2nd Production 310% (current use increased 125% is base that is increased)

| Component Characteristics | | If volatile, enter "1" ** | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Maker | Coating Material | Density | Solids | VOC (non-exempt) | Propyl alcohol 71-23-8 | naphthalene 91-20-3 | trimethyl benzene 95-63-6 25551-13- | 1-methoxy-2-proanol acetate 108-65-6 | Phenol 108-905-2 | methyl n-amyl ketone 110-43-0 | butyl acetate 123-86-4 | HDI Monomer 822-06-0 | carbon black 1333-86-4 | naphtha (petroleum), light aromatic |
| | | | lb/gal | Pounds per Hour | | | | | | | | | | | |
| | PPG | AMERCOAT 101 PRIMER THINNER | 7.43 | 0.00 | 0.05 | 0.00000 | 0.00480 | 0.00082 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | PPG | AMERCOAT 370 CURE (Primer) | 7.84 | 0.063 | 0.016 | 0.01570 | 0.00000 | 0.00000 | 0.00000 | 0.00102 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | PPG | AMERCOAT 370 PEARL GRAY RESIN (Primer) | 15.69 | 0.34 | 0.07 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hourly Spray Calculations (lb/hr) | PPG | AMERCOAT 866M ACCELERATOR (Topcoat) | 8.18 | 0.00 | 0.04 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | PPG | AMERSHIELD CURE (Topcoat) | 9.35 | 0.08 | 0.01 | 0.00000 | 0.00000 | 0.00178 | 0.00000 | 0.00000 | 0.00000 | 0.00468 | 0.00094 | 0.00000 | 0.00468 |
| (Based on 24-hr averaging period, see sample calc below) | PPG | AMERCOAT 923 TOPCOAT THINNER | 6.84 | 0.00 | 0.04 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.04419 | 0.00000 | 0.00000 | 0.00000 |
| | PPG | AMERSHIELD BLACK RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD DEEP TINT RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD LIGHT TINT RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD NEUTRAL TINT RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD BRIGHT RED RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD TRINITY WHITE RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD RED TINT RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD HIGH HIDING YELLOW TINT | | | | | | | | | | | | | |
| | PPG | Composite Topcoat Finish Paint | 11.43 | 0.24 | 0.08 | 0.00000 | 0.00295 | 0.00000 | 0.02953 | 0.00000 | 0.00000 | 0.05905 | 0.00000 | 0.01476 | 0.00295 |
| | Eastwood | Aerosol Injected Cleaner | 5.98 | 0.00 | 0.00 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | **Spray Total (lb/hr)** | | 0.724 | 0.308 | 0.0157 | 0.008 | 0.0026 | 0.030 | 0.00102 | 0.044 | 0.064 | 0.00094 | 0.0148 | 0.00763 |

| | Maker | Coating Material | Density | Solids | VOC (non-exempt) | Propyl alcohol 71-23-8 | naphthalene 91-20-3 | trimethyl benzene 95-63-6 25551-13- | 1-methoxy-2-proanol acetate 108-65-6 | Phenol 108-905-2 | methyl n-amyl ketone 110-43-0 | butyl acetate 123-86-4 | HDI Monomer 822-06-0 | carbon black 1333-86-4 | naphtha (petroleum), light aromatic |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | lb/gal | Tons per Year | | | | | | | | | | | |
| | PPG | AMERCOAT 101 PRIMER THINNER | 7.43 | 0.00 | 0.15 | 0.000 | 0.015 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | PPG | AMERCOAT 370 CURE (Primer) | 1.92 | 0.20 | 0.049 | 0.0490 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | PPG | AMERCOAT 370 PEARL GRAY RESIN (Primer) | 15.69 | 1.05 | 0.21 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | PPG | AMERCOAT 866M ACCELERATOR (Topcoat) | 8.18 | 0.00 | 0.13 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Annual Spray Calculations (tons/yr) | PPG | AMERSHIELD CURE (Topcoat) | 9.35 | 0.26 | 0.03 | 0.000 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | 0.015 | 0.0029 | 0.000 | 0.015 |
| | PPG | AMERCOAT 923 TOPCOAT THINNER | 6.84 | 0.00 | 0.14 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.138 | 0.000 | 0.000 | 0.000 | 0.000 |
| (See sample calc below) | PPG | AMERSHIELD BLACK RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD DEEP TINT RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD LIGHT TINT RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD NEUTRAL TINT RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD BRIGHT RED RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD TRINITY WHITE RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD RED TINT RESIN | | | | | | | | | | | | | |
| | PPG | AMERSHIELD HIGH HIDING YELLOW TINT | | | | | | | | | | | | | |
| | PPG | Composite Topcoat Finish Paint | 11.43 | 0.75 | 0.25 | 0.000 | 0.009 | 0.000 | 0.092 | 0.000 | 0.000 | 0.184 | 0.000 | 0.046 | 0.009 |
| | Eastwood | Aerosol Injected Cleaner | 5.98 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | | **Spray Total (tons/yr)** | | 2.26 | 0.96 | 0.0490 | 0.024 | 0.008 | 0.092 | 0.00318 | 0.14 | 0.20 | 0.00292 | 0.046 | 0.0238 |

Conservative Production Growth Increase 125%

Notes:

1. Trinity Trailer estimates max. primer or topcoat use on any day is 1 600-ml. paint cup (20.3 ozs/day; 0.1585 gals /day); for conservative estimate and growth, production increased 300%.

1 gallon primer:1 pint cure; 1 gallon topcoat:1 pint cure:8 ozs. accelerant.

Trinity Trailer estimates max. thinner use 1 gal./6 months; assume 0.167 gals./month, 0.04 gals /week; assume 0.04 gals. were used in an 8-hr. day (~25% of daily primer); daily amount prorated from 8-hr day to 24-hour day (3X) for max. unrestricted PTE (0.12 gals./day)

Trinity Trailer estimates max. daily gun cleaning use 0.25 ozs./day (0.00195 gals./day); daily amount prorated from 8-hr day to 24-hour day (3X) for max. unrestricted PTE (0.00585 gals./day)

2. Composite topcoat colors based on max. phyical and chemical characterisitics.

**Trinity Trailer - Federal Way** **Coating Emissions**

| Toxic Air Pollutants | CAS | Restricted Maximum Spray Rate[1] (lb/hr) | Spray Retention Rate[2] (%) | Restricted Potential to Emit (lb/hr) | Paint Filter Efficiency[3] (%) | Controlled Emission Rate (lb/hr) |
|---|---|---|---|---|---|---|
| butyl acetate | 123-86-4 | 0.064 | 0% | 0.064 | 0% | 0.064 |
| carbon black | 1333-86-4 | 0.01 | 60% | 0.0059 | 0% | 0.006 |
| HMDI hexa-methylene diisocyanate monomer | 822-06-0 | 0.0009 | 85% | 0.0001 | 0% | 0.0001 |
| 1-methoxy-2-proanol acetate (2-methoxy-1-methylethyl acetate) | 108-65-6 | 0.0295 | 0% | 0.0295 | 0% | 0.0295 |
| methyl n-amyl ketone | 110-43-0 | 0.044 | 0% | 0.044 | 0% | 0.044 |
| Naphthalene | 91-20-3 | 0.008 | 0% | 0.008 | 0% | 0.008 |
| Phenol | 108-905-2 | 0.001 | 0% | 0.001 | 0% | 0.001 |
| Propyl alcohol | 71-23-8 | 0.016 | 0% | 0.016 | 0% | 0.016 |
| trimethyl benzene | 95-63-6 | 0.003 | 0% | 0.003 | 0% | 0.003 |
| VM&P and other light naphtha | 64742-95-6 8032-32-4 64742-89-8 64742-88-7 | 0.008 | 0% | 0.008 | 0% | 0.008 |
| Xylene-Alternate Coating HAP% | 1330-20-7 | 0.318 | 0% | 0.318 | 0% | 0.318 |

| Criteria Air Pollutants | Maximum Spray Rate[1] | | Spray Retention Rate[2] | Potential to Emit | | Paint Filter Efficiency[3] | Controlled Emissions | |
|---|---|---|---|---|---|---|---|---|
| | lb/hr | ton/yr | % | lb/hr | ton/yr | % | lb/hr | ton/yr |
| $PM_{10}$ | 0.72 | 2.26 | 60% | 0.29 | 0.90 | 0.0% | 0.289 | 0.90 |
| $PM_{2.5}$ | 0.72 | 2.26 | 60% | 0.29 | 0.90 | 0.0% | 0.289 | 0.90 |
| VOC | 0.78 | 2.43 | 0% | 0.78 | 2.43 | 0% | 0.78 | 2.43 |

| Hazardous Air Pollutants (HAP) | CAS | Maximum Spray Rate[1] (ton/yr) | Spray Retention Rate (%) | Potential to Emit (ton/yr) | Maximum Spray Rate[1] lbs./day) | Spray Retention Rate (%) | Potential to Emit (lbs./day.) |
|---|---|---|---|---|---|---|---|
| HMDI (NOTE 4) | 822-06-0 | 0.0029 | 85% | 0.0004 | 0.0225 | 85% | 0.0034 |
| napthalene | 91-20-3 | 0.024 | 0% | 0.02 | 0.186 | 0% | 0.19 |
| Xylene-Alternate Coating HAP% | 1330-20-7 | 0.993 | 0% | 0.99 | 7.638 | 0% | 7.64 |
| Total Coating HAPs | | | | 1.02 | | | 7.83 |

Notes:

1. The maximum hourly or annual Spray Total of the coatings.
2. Non-volatile emissions are calculated using a coating retention rate of 58% (Trinity Trailer transfer efficiency study 58% primer and 69% topcoat).
3. Uncontrolled non volatile TAP emissions are calculated with a removal efficiency of 0%. Controlled PM emissions are calculated using an exhaust filter removal efficiency of 99%.
4. Isocyanate reaction factor (HMI monomer polymerized) = **85%**

## Facility-Wide Unrestricted Criteria Regulated Pollutant Emissions

**Table 4-1a: Pre-Project Potential to Emit**

| Emissions Unit | $PM_{2.5}$ | $PM_{10}$ | $SO_2$ | $NO_2$ | CO | VOC | Lead | HAPs | Total[1] | Greenhouse Gases $CO_2e$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | | | | | | |
| Heaters | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| Welding | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| Plasma Cutting | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| Coatings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| **Total =** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 | 0 | 0 |

**Table 4-1b: Post-Project Potential to Emit** (based on maximum continuous operations)

| Emissions Unit | $PM_{2.5}$ | $PM_{10}$ | $SO_2$ | $NO_2$ | CO | VOC | Lead | HAPs | Total[1] | Greenhouse Gases $CO_2e$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | | | | | | |
| Heaters | 7.28E-02 | 7.28E-02 | 5.75E-03 | 9.58E-01 | 8.05E-01 | 5.27E-02 | 4.79E-06 | 1.81E-02 | | 1.15E+03 |
| Welding | 1.09E-02 | 1.09E-02 | | | | | | 4.03E-02 | | |
| Plasma Cutting | 4.20E+01 | 4.20E+01 | | 9.98E+00 | | | | 1.20E+01 | | |
| Coatings | 3.79E+00 | 3.79E+00 | | | | 4.04E+00 | | 1.04E-01 | | |
| **Total =** | **4.59E+01** | **4.59E+01** | **5.75E-03** | **1.09E+01** | **8.05E-01** | **4.09E+00** | **4.79E-06** | **1.21E+01** | **7.39E+01** | **1.15E+03** |

**Table 4-1c: Changes in Potential to Emit** (based on maximum continuous operations)

| Emissions Unit | $PM_{2.5}$ | $PM_{10}$ | $SO_2$ | $NO_2$ | CO | VOC | Lead | HAPs | Total[1] | Greenhouse Gases $CO_2e$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | | | | | | |
| Heaters | 7.28E-02 | 7.28E-02 | 5.75E-03 | 9.58E-01 | 8.05E-01 | 5.27E-02 | 4.79E-06 | 1.81E-02 | | 1.15E+03 |
| Welding | 1.09E-02 | 1.09E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.03E-02 | | 0.00E+00 |
| Plasma Cutting | 4.20E+01 | 4.20E+01 | 0.00E+00 | 9.98E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.20E+01 | | 0.00E+00 |
| Coatings | 3.79E+00 | 3.79E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.04E+00 | 0.00E+00 | 1.04E-01 | | 0.00E+00 |
| **Total =** | **4.59E+01** | **4.59E+01** | **5.75E-03** | **1.09E+01** | **8.05E-01** | **4.09E+00** | **4.79E-06** | **1.21E+01** | **7.39E+01** | **1.15E+03** |

Grand Total[1] Does not include greenhouse gases

## Facility-Wide Restricted Criteria Regulated Pollutant Emissions

**Table 4-2a: Pre-Project Potential to Emit** (based on existing permit conditions)

| Emissions Unit | $PM_{2.5}$ | $PM_{10}$ | $SO_2$ | $NO_2$ | CO | VOC | Lead | Greenhouse Gases $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | | | | |
| Heaters | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Welding | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plasma Cutting | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coatings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total =** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |

**Table 4-2b: Post-Project Potential to Emit** (based on requested permit conditions)

| Emissions Unit | $PM_{2.5}$ | $PM_{10}$ | $SO_2$ | $NO_2$ | CO | VOC | Lead | Greenhouse Gases $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | | | | |
| Heaters | 7.28E-02 | 7.28E-02 | 5.75E-03 | 9.58E-01 | 8.05E-01 | 5.27E-02 | 4.79E-06 | 1.15E+03 |
| Welding | 2.59E-05 | 2.59E-05 | | | | | | |
| Plasma Cutting | 1.20E-03 | 1.20E-03 | | 1.42E+00 | | | | |
| Coatings | 9.03E-01 | 9.03E-01 | | | | 9.61E-01 | | |
| **Total =** | **9.77E-01** | **9.77E-01** | **5.75E-03** | **2.38E+00** | **8.05E-01** | **1.01E+00** | **4.79E-06** | **1.15E+03** |

**Table 4-2c: Changes in Potential to Emit**

| Emissions Unit | $PM_{2.5}$ | $PM_{10}$ | $SO_2$ | $NO_2$ | CO | VOC | Lead | Greenhouse Gases $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | | | | |
| Heaters | 7.28E-02 | 7.28E-02 | 5.75E-03 | 9.58E-01 | 8.05E-01 | 5.27E-02 | 4.79E-06 | 1.15E+03 |
| Welding | 2.59E-05 | 2.59E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Plasma Cutting | 1.20E-03 | 1.20E-03 | 0.00E+00 | 1.42E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Coatings | 9.03E-01 | 9.03E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.61E-01 | 0.00E+00 | 0.00E+00 |
| **Total =** | **9.77E-01** | **9.77E-01** | **5.75E-03** | **2.38E+00** | **8.05E-01** | **1.01E+00** | **4.79E-06** | **1.15E+03** |

Facility Wide Toxic Air Pollutant Emissions

| Non-Carcinogenic Toxic Air Pollutant (24 hr Average) | Restricted Controlled Hourly Emissions | | Controlled Emission Change (lb/hr) | Screening Emission Level (lb/hr) | Controlled Exceeds TAP EL? |
|---|---|---|---|---|---|
| | Pre-Project (lb/hr) | Post Project (lb/hr) | | | |
| Barium | 0 | 9.63E-06 | 9.63E-06 | 3.30E-02 | No |
| Butyl Acetate | 0 | 6.37E-02 | 6.37E-02 | 4.73E+01 | No |
| Carbon Black | 0 | 5.91E-03 | 5.91E-03 | 2.30E-01 | No |
| Chromium | 0 | 1.23E-04 | 1.23E-04 | 3.30E-02 | No |
| Cobalt | 0 | 1.84E-07 | 1.84E-07 | 3.30E-03 | No |
| Copper | 0 | 6.28E-06 | 6.28E-06 | 6.70E-02 | No |
| Dichlorobenezene | 0 | 2.63E-06 | 2.63E-06 | 2.00E+01 | No |
| HDI | 0 | 1.40E-04 | 1.40E-04 | 2.00E-03 | No |
| Iron Oxide Fume | 0 | 4.11E-04 | 4.11E-04 | 3.33E-01 | No |
| Manganese | 0 | 9.88E-06 | 9.88E-06 | 6.70E-02 | No |
| Mercury | 0 | 5.69E-07 | 5.69E-07 | 3.00E-03 | No |
| 1-methoxy-2-proanol acetate (2-methoxy-1-methylethyl acetate) | 0 | 2.95E-02 | 2.95E-02 | 2.40E+01 | No |
| Methyl n-Amyl Ketone | 0 | 4.42E-02 | 4.42E-02 | 1.57E+01 | No |
| Molybdenum | 0 | 6.69E-06 | 6.69E-06 | 3.33E-01 | No |
| Naphthalene | 0 | 7.75E-03 | 7.75E-03 | 3.33E+00 | No |
| Phenol | 0 | 1.02E-03 | 1.02E-03 | 1.27E+00 | No |
| Phosphorous | 0 | 4.16E-06 | 4.16E-06 | 7.00E-03 | No |
| Propyl alcohol | 0 | 1.57E-02 | 1.57E-02 | 2.40E+01 | No |
| Selenium | 0 | 5.25E-08 | 5.25E-08 | 1.30E-02 | No |
| Silicon | 0 | 4.16E-06 | 4.16E-06 | 6.67E-01 | No |
| Trimethyl benzene | 0 | 2.59E-03 | 2.59E-03 | 8.20E+00 | No |
| Vanadium | 0 | 5.03E-06 | 5.03E-06 | 3.00E-03 | No |
| VM&P Naphtha | 0 | 7.63E-03 | 7.63E-03 | 9.13E+01 | No |
| Xylene | 0 | 3.18E-01 | 3.18E-01 | 2.90E+01 | No |
| Zinc | 0 | 6.34E-05 | 6.34E-05 | 6.67E-01 | No |
| **Carcinogenic Toxic Air Pollutant (Annual Average)** | **Restricted Controlled Hourly Emissions** | | **Emission Change (lb/hr)** | **Screening Emission Level (lb/hr)** | **Controlled Exceeds TAP EL?** |
| | **Pre-Project (lb/hr)** | **Post Project (lb/hr)** | | | |
| Arsenic | 0 | 4.4E-07 | 4.4E-07 | 1.5E-06 | No |
| Benzene | 0 | 4.6E-06 | 4.6E-06 | 8.0E-04 | No |
| Beryllium | 0 | 2.6E-08 | 2.6E-08 | 2.8E-05 | No |
| Cadmium | 0 | 2.4E-06 | 2.4E-06 | 3.7E-06 | No |
| Chromium+6 | 0 | 2.1E-09 | 2.1E-09 | 5.6E-07 | No |
| Formaldehyde | 0 | 1.6E-04 | 1.6E-04 | 5.1E-04 | No |
| 3-Methylchloranthene | 0 | 3.9E-09 | 3.9E-09 | 2.5E-06 | No |
| Nickel | 0 | 2.67E-05 | 2.67E-05 | 2.7E-05 | No |
| Polyaromatic Hydrocarbon (Max) | 0 | 1.5E-06 | 1.5E-06 | 9.1E-05 | No |
| Polycyclic Organics: 7-PAH Group | 0 | 2.5E-08 | 2.5E-08 | 2.0E-06 | No |

Criteria Pollutant Restricted Controlled Emissions

| Max Restricted Controlled PTE Criteria Air Pollutants | Estimated Emission Rate (T/yr) | 10% Significant Emission Rate (T/yr) | BRC Exemption Below 10% Sig. Rate? (Y/N) |
|---|---|---|---|
| $NO_2$ | 2.38E+00 | 4 | Yes |
| CO | 8.05E-01 | 10 | Yes |
| PM | 9.78E-01 | 2.5 | Yes |
| $PM_{10}$ | 9.78E-01 | 1.5 | Yes |
| $PM_{2.5}$ | 9.78E-01 | 1 | Yes |
| SOx | 5.75E-03 | 4 | Yes |
| VOC | 2.49E+00 | 4 | Yes |
| Lead | 4.79E-06 | 0.06 | Yes |

Facility-Wide Hazardous Air Pollutant Emissions

| Hazardous Air Pollutant | Unrestricted Uncontrolled Potential to Emit (tons/yr) | Restricted Controlled Potential to Emit |
|---|---|---|
| Arsenic | 1.9E-06 | 1.916E-06 |
| Benzene | 2.0E-05 | 2.012E-05 |
| Beryllium | 1.1E-07 | 1.150E-07 |
| Cadmium | 1.1E-05 | 1.054E-05 |
| Chromium | 7.8E+00 | 2.366E-04 |
| Cobalt | 8.0E-07 | 8.073E-07 |
| Dichlorobenzene | 1.1E-05 | 1.150E-05 |
| Formaldehyde | 7.2E-04 | 7.187E-04 |
| Hexane | 1.7E-02 | 1.725E-02 |
| HMDI | 1.8E-03 | 4.380E-04 |
| Lead | 4.8E-06 | 4.791E-06 |
| Manganese | 7.7E-01 | 2.381E-04 |
| Mercury | 2.5E-06 | 2.491E-06 |
| Naphthalene | 1.0E-01 | 2.419E-02 |
| Nickel | 3.4E+00 | 1.609E-04 |
| Polycyclic Organic Matter (PAH MAX.) | 6.5E-06 | 6.537E-06 |
| Selenium | 2.0E-05 | 2.012E-05 |
| Xylene | 4.2E+00 | 9.930E-01 |
| **TOTAL =** | **16.29** | **1.04** |

# APPENDIX B – FACILITY DRAFT COMMENTS

# APPENDIX C – PROCESSING FEE

# PTC Processing Fee Calculation Worksheet

**Instructions:**
**Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.**

**Company:** Trinity Trailer Mfg., Inc.
**Address:** 7533 S. Federal Way
**City:** Boise
**State:** Idaho
**Zip Code:** 83716
**Facility Contact:** Dean Hearst
**Title:** Production Manager
**AIRS No.:** 336212

| | |
|---|---|
| N | Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N |
| Y | Did this permit require engineering analysis? Y/N |
| N | Is this a PSD permit Y/N (IDAPA 58.01.01.205.04) |

| Emissions Inventory | | | |
|---|---|---|---|
| Pollutant | Annual Emissions Increase (T/yr) | Annual Emissions Reduction (T/yr) | Annual Emissions Change (T/yr) |
| $NO_x$ | 2.4 | 0 | 2.4 |
| $SO_2$ | 0.0 | 0 | 0.0 |
| CO | 0.8 | 0 | 0.8 |
| PM10 | 0.3 | 0 | 0.3 |
| VOC | 2.5 | 0 | 2.5 |
| TAPS/HAPS | 1.0 | 0 | 1.0 |
| Total: | 0.0 | 0 | **7.1** |
| | | | |
| Fee Due | **$ 2,500.00** | | |

Comments: P-2017.0045, Proj 61930, Facility ID 001-00343